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33. An apparatus for transmitting digital signals over a telephone landline or a wireless telephone system and for transmitting analog signals over the telephone landline or the wireless telephone system, comprising:

a modem;

a telephone line interface;

a microcontroller;

a memory operatively connected to said microcontroller;

protocol software in said memory for controlling the operation of the apparatus;

a wireless telephone interface for operatively connecting to a wireless telephone;

means for providing analog communications for transmission over the telephone landline or the wireless telephone system;

a first analog switch operatively connecting a first terminal either to said means for providing analog communications or to said modem as decided by the microcontroller;

a second analog switch operatively connecting said telephone line interface and said wireless telephone interface or not as decided by the microcontroller; and

a third analog switch operatively connecting the first terminal of the first analog switch with said telephone line interface or not as decided by the microcontroller.

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66. The apparatus of claim 32 wherein said protocol software includes means for retrying the connection phase for a total of six tries.

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67. The apparatus of claim 33 wherein said protocol software includes means for retransmitting data packets, after successful connection phase, for a total of eighteen tries.

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68. The apparatus of claim 34 wherein said protocol software includes means to suspend transmission to wait for the recovery of loss of carrier.

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69. The apparatus of claim 35 wherein said protocol software includes means to switch

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the mode of operation of said modem from synchronous to asynchronous if carrier loss occurs during transmission in the synchronous mode of operation and to switch back to the synchronous mode upon recovery of the carrier.

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An apparatus for transmission digital signals over a telephone landline, a wireless radio frequency network or a wireless telephone system and for transmitting analog signals over the telephone landline, the wireless radio frequency network or a wireless telephone system, comprising:

a modem;

a telephone line interface;

a microcontroller operatively connected to said modem;

a memory operatively connected to said microcontroller;

protocol software in said memory for controlling the operation of the apparatus;

a wireless telephone interface for operatively connecting to a wireless telephone;

a radio frequency interface for connecting to a radio frequency transceiver unit;

means for providing analog communication;

a first analog switch operatively connecting a first terminal either to said means for providing analog communications or to said modem as decided by the microcontroller;

a second analog switch operatively connecting said telephone line interface and said wireless telephone interface or not as decided by the microcontroller; and

a third analog switch operatively connecting the first terminal of the first analog switch with either said telephone line interface or said radio frequency interface as decided by the microcontroller.

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The apparatus of claim 70 wherein said protocol software includes means for retrying the connection phase for a said number of tries.

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The apparatus of claim 71 wherein said protocol software includes means for retransmitting data packets, after successful connection phase, for a said number of tries.

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The apparatus of claim ³⁹72 wherein said protocol software includes means to suspend transmission to wait for the recovery of loss of carrier.

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The apparatus of claim ⁴⁰73 wherein said protocol software includes means to switch the mode of operation of said modem from synchronous to asynchronous if carrier loss occurs during transmission in the synchronous mode of operation and to switch back to the synchronous mode upon recovery of the carrier.

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An apparatus for transmission of digital signals over ordinary telephone line service or a wireless telephone system and for transmitting analog signals over the telephone line service, the radio frequency or the wireless telephone system, comprising:

a modem;

a telephone line interface operatively connected to said modem;

a microcontroller operatively connected to said modem;

a memory operatively connected to said microcontroller;

protocol software in said memory for controlling the operation of the apparatus;

a wireless telephone interface for connecting to a wireless telephone unit;

radio frequency interface for connecting to radio frequency telemetry modules or packet radios;

means for providing analog communication;

a first analog switch operatively connecting a first terminal either to said means for providing analog communications or to said modem as decided by the microcontroller;

a second analog switch operatively connecting said telephone line interface and said wireless telephone interface or not as decided by the microcontroller;

a third analog switch operatively connecting the first terminal of the first analog switch either to said telephone line interface or to said radio frequency interface as decided by the microcontroller; and

a fourth analog switch operatively connecting a remote device to said telephone line interface or not as decided by the microcontroller.

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The apparatus of claim 75 wherein said protocol software includes means for retrying the connection phase for a total of six tries over a wireless telephone system, radio frequency network or a telephone line service.

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The apparatus of claim 76 wherein said protocol software includes means for retransmitting data packets, after successful connection phase, for a total of eighteen tries over a wireless telephone system, radio frequency network or a telephone line service.

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The apparatus of claim 77 wherein said protocol software includes means to suspend transmission from the apparatus to wait for the recovery of loss of carrier over a wireless telephone system, radio frequency network or a telephone line service.

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The apparatus of claim 78 wherein said protocol software includes means to switch the mode of operation of said apparatus from synchronous to asynchronous if carrier loss occurs during transmission in the synchronous mode of operation and to switch back to the synchronous mode upon recovery of the carrier over a wireless telephone system, radio frequency network or a telephone line service.

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An apparatus for transmission of standard or fax digital signals over ordinary telephone line service, radio frequency network, satellite system or a wireless telephone system and for transmitting analog signals over the telephone line service, the radio frequency network, the satellite system and the wireless telephone system, comprising:

a modem;

a telephone line interface;

a microcontroller operatively connected to said modem;

a read-only memory operatively connected to said microcontroller;

protocol software in said read-only memory in the form of firmware for controlling the operation of the apparatus;

a wireless telephone interface for connecting said microcontroller to a wireless

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telephone unit;
a radio frequency interface for connecting said microcontroller to a radio frequency telemetry module or packet radio unit;
means for providing analog communication over the telephone line, the wireless radio frequency network, the satellite system or the wireless telephone system;
a first analog switch operatively connecting a first terminal either to said means for providing analog communications or to said modem as decided by the microcontroller;
a second analog switch operatively connecting said telephone line interface and said wireless telephone interface or not as decided by the microcontroller;
a third analog switch operatively connecting the first terminal of the first analog switch either to said telephone line interface or to said radio frequency interface as decided by the microcontroller; and
a fourth analog switch operatively connecting said satellite system to said telephone line interface or not as decided by the microcontroller.

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81. The apparatus of claim 47 wherein said protocol software includes means for retrying the connection phase for a total of six tries over a wireless telephone system, radio frequency network, satellite system or a telephone line service.

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82. The apparatus of claim 48 wherein said protocol software includes means for retransmitting data packets, after successful connection phase, for a total of eighteen tries over a wireless telephone system, radio frequency network, satellite system or a telephone line service.

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83. The apparatus of claim 49 wherein said protocol software includes means to suspend transmission from the apparatus to wait for the recovery of loss of carrier over a wireless telephone system, radio frequency network, satellite system or a telephone line service.

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84. The apparatus of claim 50 wherein said protocol software includes means to switch

the mode of operation of said apparatus from synchronous to asynchronous if carrier loss occurs during transmission in the synchronous mode of operation and to switch back to the synchronous mode upon recovery of the carrier over a wireless telephone system, radio frequency network, satellite system or a telephone line service.

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An apparatus for transmitting digital signals over a telephone landline or a wireless telephone system and for transmitting analog signals over the telephone landline or the wireless telephone system, comprising:

a modem;

a telephone line interface;

a wireless telephone interface for operatively connecting to a wireless telephone;
means for providing analog communications for transmission over the telephone landline or the wireless telephone system;

a first analog switch operatively connecting a first terminal to either said means for providing analog communications or said modem;

a second analog switch selectively operatively connecting said telephone line interface and said wireless telephone interface; and

a third analog switch selectively operatively connecting the first terminal of the first analog switch with said telephone line interface.

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86.

An apparatus for transmission digital signals over a telephone landline, a wireless radio frequency network or a wireless telephone system and for transmitting analog signals over the telephone landline, the wireless radio frequency network or a wireless telephone system, comprising:

a modem;

a telephone line interface;

a wireless telephone interface for operatively connecting to a wireless telephone;

a radio frequency interface for connecting to a radio frequency transceiver unit;
means for providing analog communication;

a first analog switch operatively connecting a first terminal either to said means for

providing analog communications or to said modem;
a second analog switch for selectively operatively connecting said telephone line interface and said wireless telephone interface; and
a third analog switch operatively connecting the first terminal of the first analog switch either to said telephone line interface or to said radio frequency interface.

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An apparatus for transmission of digital signals over ordinary telephone line service or a wireless telephone system and for transmitting analog signals over the telephone line service, the radio frequency or the wireless telephone system, comprising:

a modem;
a telephone line interface operatively connected to said modem;
a wireless telephone interface for connecting to a wireless telephone unit;
radio frequency interface for connecting to radio frequency telemetry modules or packet radios;

means for providing analog communication;

a first analog switch operatively connecting a first terminal either to said means for providing analog communications or to said modem;

a second analog switch for selectively operatively connecting said telephone line interface and said wireless telephone interface;

a third analog switch operatively connecting the first terminal of the first analog switch either to said telephone line interface or to said radio frequency interface; and

a fourth analog switch for selectively operatively connecting a remote device to said telephone line interface.

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An apparatus for transmission of standard or fax digital signals over ordinary telephone line service, radio frequency network, satellite system or a wireless telephone system and for transmitting analog signals over the telephone line service, the radio frequency network, the satellite system and the wireless telephone system,